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ent aspect of words: they serve our purpose very well as they are, and we are inclined to deprecate any alteration, lest it might give a foreign or a mutilated look to what is now familiar and symmetrical to our eye. We should not think of ourselves at all in this matter, but think only of the helpless juvenile throng who crowd into the places which we vacated years and years ago. Simplify spelling for the sake of the little ones who must suffer from our neglect.

One other point calls for notice; namely, the moderate character of the present proposal. The full amount of change that can result from this measure of simplified spelling is but a small part of what is necessary to make the writing of our language phonetic. We shall still have to use double letters for single sounds in a large proportion of both vowels and consonants, and to tolerate many irregularities in such compounds. In fact, the utility of a purely phonetic initiatory method, such as that of "World-English," will be still almost as marked as it is now.

Why, then, advocate this measure? Because it is a step in the right direction, and step by step is the best mode of making progress. There is more to be done than can be effected by one impulse, and improvements once commenced will be carried farther and farther by succeeding generations. Our language is apparently destined to spread over the world. It is worthy of the most perfect vehicle of communication that skill can devise. If we cannot complete the work, we can at least help it on, and leave it one stage more advanced than we found it.

Something must be done. Our spelling is a disgrace. Responsibility for its lawless condition attaches nowhere in particular, but rests everywhere. The burden of this responsibility should be laid on some accountable official empowered to consider and inaugurate improvements. In the absence of any such delegated authority, the direct action of the representatives of the people is invoked, not to impose changes on the unwilling or the indifferent, but only to exemplify, and by example to invite adoption of the method of improvement recommended by competent advisers.

Private efforts have already been most liberally devoted to the work of amending orthography; but no private efforts can be made on the scale, or with the influence, of a measure emanating from Congress. Besides, this work is peculiarly of public and not of private benefit. It must be done by you, or else it must remain unaccomplished.

HEALTH MATTERS.

The Bacteriology of Whooping-Cough.

At the third general meeting of Russian medical men at St. Petersburg, Professor Afanasieff read an able and exhaustive bacteriological essay on the subject of pertussis. At the suggestion of Professor Afanasieff, who was anxious to verify his results, Dr. Semtchenko took up the line to further investigate the matter, especially in clinical regards. The conclusions arrived at by the Kazan pædiatrist, says the *London Medical Recorder*, may be given thus: 1. Afanasieff's bacterium is actually specific, and hence fully entitled to bear the name of the *bacillus tussis convulsivæ*; 2. The micro-organism makes its appearance in the sputum during the catarrhal stage, somewhere about the fourth day of the disease, but possibly still earlier; 3. Subsequently its numerical strength increases, the intensity of paroxysms keeping pace with the increase; 4. The microbes disappear from the discharge, apparently somewhat before a complete cessation of whoops (about the time when the number of paroxysms sinks down to four or two per day); 5. As soon as pertussis becomes complicated with catarrhal pneumonia, the bacilli in the patient's sputa show an enormous increase in number; 6. Altogether, the pertussis pneumonia seems to be quite different from other varieties of pulmonary inflammation; 7. The *bacillus tussis convulsivæ* presents a great importance not only in etiological and diagnostic, but also in prognostic regards; 8. As to the behavior of the microbe toward antiseptic agents, its vitality is destroyed as soon as

the medium (jelly) contains corrosive sublimate in the proportion of 1 to 60,000, or resorcin in that of 1 to 1,200, or phenol in the same one, or hydrochlorate of quinine in that of 1 to 800. Drs. Afanasieff's and Semtchenko's researches were repeated (at least partially) by Professor Tschamer (*Wiener med. Wochens.*, No. 17, 1888) and Dr. E. C. Wendt of New York (*Medical News*, June 2, 1888). On the whole, both of the authors confirmed the statements made by the Russian observers. Dr. Wendt, however, differs from Dr. Semtchenko in some more or less subordinate points. Thus, he could not detect the presence of the bacilli in earlier stages of the affection; neither was he able to notice any co-relation between the number of paroxysms and that of the bacteria in the patient's sputa; while, on the other hand, he found still the bacilli in the discharge, even after a complete disappearance of whoops. In conclusion, Professor Afanasieff draws attention to the several points which demand further elaborate investigations. It is necessary, he says, (1) to more closely examine the distribution of the microbes in the respiratory mucous membrane, as well as in broncho-pneumonic foci; (2) to study the behavior of the bacterium toward various coloring-matters (in order to discover a characteristic differential test for the bacillus); (3) to study the spore-formation (which is important, especially in prophylactic regards); (4) to most carefully inquire into a clinical bacteriology of the pertussis sputa from the beginning to the end of the attack, and even during convalescence (which is important for diagnostic, prognostic, and prophylactic purposes); and (5) to further study the behavior of the bacillus toward all possible parasiticide agents (to possibly discover some specific bactericidal substances, which discovery would prove of untold value in regard to the therapeutics of the infantile scourge in question).

[Sea-Water and the Nutrition of Marine Animals.

Drs. Pouchet and Chabry have recently conducted some experiments of great biological interest. They have reared larval germs of sea-urchins in artificial sea-water and in sea-water deprived of all or more or less of its lime, in order to observe the influence of the composition of the water on the development of the larvæ. Normally a distinct skeleton should develop. According to the *British Medical Journal*, it was found, that, when the larvæ were reared in sea-water deprived of about nine-tenths of its lime, not even a rudimentary skeleton was developed. A very trifling diminution in the normal amount of lime, effected by careful precipitation by chemical re-agents, was found sufficient to interfere markedly with the growth of the skeleton in the larvæ: hence the medium in which some marine germs of life exist would appear to act as a nutritive agent as well as an atmosphere whence oxygen may be obtained for respiration. The influence of the chemical composition of the water in different seas probably determines many differences in the anatomy of marine animals, but Drs. Pouchet and Chabry admit that this question requires much consideration. How far the embryo in the higher terrestrial forms of life may receive nutrition direct from substances in solution in the *liquor amnii*, as well as through the placental circulation, is another question worth solving.

NOTES AND NEWS.

PROFESSOR C. S. PLUMB of Knoxville, Tenn., has accepted the position of vice-director of the Agricultural Experiment Station of Purdue University, Lafayette, Ind., and after the 1st of April next his address will be at the latter place.

— At a recent meeting of the Paris Geographical Society, as we learn from *Nature*, an interesting lecture was delivered by Dr. Hamy on the history of scientific missions in France under the old monarchy. He commenced practically with the reign of Francis I., and described many missions abroad, with purely scientific aims, which are now either forgotten, or the results of which have never been published. Thus, the apothecary to Henri IV. went all over the globe in search of the peculiar products of each country, especially medicinal and food plants; still earlier,